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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/585,109	01/18/2007	Kazuhito Sato	Q95810	5098
65565	7590	03/11/2009		
SUGHRUE-265550 2100 PENNSYLVANIA AVE. NW WASHINGTON, DC 20037-3213			EXAMINER HANOR, SERENA L	
			ART UNIT	PAPER NUMBER
			1793	
			MAIL DATE	DELIVERY MODE
			03/11/2009	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/585,109	<b>Applicant(s)</b> SATO ET AL.	
	<b>Examiner</b> SERENA L. HANOR	<b>Art Unit</b> 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 January 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,7-14,17,21 and 22 is/are pending in the application.
- 4a) Of the above claim(s) 7-14,21 and 22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4 and 17 is/are rejected.
- 7) ☒ Claim(s) 1 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/8/2008, 12/23/2008</u> .                                    | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Election/Restrictions***

- i. Claims 7-14 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse of Group II, currently consisting of claims 1, 2, 4 and 17, in the telephonic interview with Mr. Peter Olexy on 7/29/2008.
- ii. Newly submitted claims 21 and 22 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: the invention originally claimed and elected without traverse is drawn to a catalyst, while the newly added claims are drawn to a method of using said catalyst, which is designated as Group III, now claims 7-14, 21 and 22, which was non-elected without traverse.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 21 and 22 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the" in lines 1 and 6. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The person having ordinary skill in the art has the capability of understanding the scientific and engineering principles applicable to the claimed invention. The references of record in this application reasonably reflect this level of skill.

Claims 1, 2, 4 and 17 are rejected under 35 U.S.C. 103(a) as obvious over Fukunaga et al. (WO 02/078840, using U.S. Patent No. 7,378,368 B2 as an English translation).

Fukunaga et al. disclose a catalyst for reacting synthetic gas in a Fischer-Tropsch synthesis (col. 11 lines 3-5) obtainable by supporting a ruthenium compound and a sodium compound on a support composed of a manganese oxide and an aluminum oxide (col. 4 lines 39-63, col. 5 lines 4-37, col. 7 lines 32-54, *Applicants' claim 1*), wherein the aluminum oxide has a pore volume such that pores having a pore diameter of 8 nm or more account for 50% or more of the total pore volume (the aluminum oxide is made by the same processes as that of the instant invention and has a similar pore volume, Specification p. 14-16 and 23-25) (col. 5 line 4-col. 6 line 18, *Applicants' claim 1*).

The supported amount of the ruthenium compound is 0.5-5% by weight in terms of ruthenium metal on the basis of the catalyst (col. 8 lines 11-20, *Applicants' claim 2*), the supported amount of the sodium compound is 0.5-10% by weight in terms of oxide on the basis of the catalyst (col. 8 lines 24-26, *Applicants' claim 4*), and the ratio of the

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manganese compound is 5-95% by weight on the basis of the catalyst (col. 4 lines line 64-65, *Applicants' claim 17*).

Fukunaga et al. differ from the instant invention in that they do not disclose the pore diameter of the aluminum oxide or that said pore diameter accounts for 50% or more of the volume of the aluminum oxide.

It would have been obvious to one of ordinary skill in the art at the time of the invention **to have recognized** that the aluminum oxide of Fukunaga et al. (col. 5 line 4-col. 6 line 18) *would have similar physical properties to that of the instant invention*, as per Applicants' claim 1, **because** they are made by the same processes under similar reaction conditions, i.e. overlapping calcination temperature ranges, and have similar pore volumes, and this ultimately results in the optimization of the catalytic activity of the aluminum oxide (Applicants' specification p. 14-16 and 23-25).

Fukunaga et al. differ from the instant invention in that they disclose the supported amount of the alkali metal compound as being 0.5-10% by weight (col. 8 lines 24-26) and the ratio of the manganese compound as being 5-95% by weight (col. 4 lines 64-66).

It would have obvious to one of ordinary skill in the art at the time of the invention **to have modified** the catalyst of Fukunaga et al. *by adjusting the supported amount of alkali metal and the ratio of the manganese compound*, as per Applicants' claims 4 and 17, **because** in the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a *prima facie* case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d

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1934 (Fed. Cir. 1990). Furthermore, "[ A ] prior art reference that discloses a range encompassing a somewhat narrower claimed range is sufficient to establish a prima facie case of obviousness." *In re Peterson*, 315 F.3d 1325, 1330, 65 USPQ2d 1379, 1382-83 (Fed. Cir. 2003). See MPEP 2144.05 [R-5].

Fukunaga et al. differ from the instant invention in that they do not disclose that the weight % of the catalyst before an aqueous alkaline solution treatment and subsequent calcination.

According to claim 1, the catalyst must only meet at least one of the characteristics (1) and (2). Examiner believes that the catalyst of Fukunaga et al. meets the limitation of characteristic (2), so therefore the limitation of characteristic (1) need not be met. In other words, the fact that the weight % limitations are determined before the aqueous alkaline solution treatment and subsequent calcination treatment is not relevant in the case of Fukunaga et al., as such treatments are not carried out. However, said weight % limitations are met by the catalyst of Fukunaga et al.

### ***Response to Arguments***

Applicant's arguments filed on 1/27/2009 have been fully considered but they are not persuasive.

Fukunaga et al.:

1. *Applicant argues that the Fukunaga catalyst is not a catalyst for producing hydrocarbons in a Fischer-Tropsch reaction.*

In response to applicant's argument that the Fukunaga catalyst is not a catalyst for producing hydrocarbons in a Fischer-Tropsch reaction, Examiner directs Applicant to

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Fukunaga et al. (col. 11 lines 3-5). Furthermore, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

2. *Applicant argues that the present invention employs an N<sub>2</sub> gas adsorption method, which measure micropores and mesopores, while Fukunaga et al. employ a mercury intrusion method, which measures mesopores and macropores, so therefore the pore characteristics of the present invention cannot be directly compared to those of Fukunaga et al.*

Although the two methods may measure different pore sizes, the present claim 1 states that 50% or more of the pores have a diameter of 8 nm or greater, in other words in the mesopore and/or macropore range. Therefore, the use of the mercury intrusion method of Fukunaga et al. to calculate the pore volume is completely relevant.

3. *Applicant argues that Fukunaga et al. teaches that a part or all of the aluminum oxides are preferably alpha-alumina, and that it is thus likely that the alpha-alumina would have a surface area and pore volume so small as to not fall within the pore characteristics as recited in the present claims. Alpha-alumina hardly has any pores known as micropores or mesopores, which are characteristic of the present invention. Therefore, as Fukunaga et al. do not contain any specific disclosure concerning specific surface area or pore diameter, no direct comparison is possible in pore characteristics between Fukunaga et al. and the present invention.*



In response to applicant's argument that Fukunaga et al. disclose an alumina that is different from that disclosed by the present invention, examiner cites that a patent's disclosure is not limited to its examples or preferred embodiments. "The use of patents as references is not limited to what the patentees describe as their own inventions or to the problems which with they are concerned. They are part of the literature of the art, relevant for all they contain." *In re Heck*, 699 F.2d 1331, 1332-33, 216 USPQ 1038, 1039 (Fed. Cir. 1983) (quoting *In re Lemelson*, 397 F.2d 1006, 1009, 158 USPQ 275, 277 (CCPA 1968)). A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art, including nonpreferred embodiments. See MPEP 2123 [R-5]. Fukunaga et al. disclose the use of several different aluminum oxides, all of which are disclosed by the instant invention, and all of which are made by the same process as the instant invention (see rejection above for citations).

4. *Applicant argues that Fukunaga et al. only teach a drying step, that a calcination step is preferably not carried out, and that a calcination step after an aqueous alkaline treatment step is not disclosed.*

Examiner respectfully points out that the limitation (1) of claim 1 is not required. At least one of limitations (1) and (2) must be met, and in the case of Fukunaga et al., examiner believes that limitation (2) has been met.

Kugler et al.:

Applicant's arguments, see p. 16-17, filed 1/27/2009, with respect to Kugler et al. have been fully considered and are persuasive. The rejection of claims 1 and 2 with respect to Kugler et al. has been withdrawn.

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Kepner et al.:

Applicant's arguments, see p. 17-18, filed 1/27/2009, with respect to Kepner et al. have been fully considered and are persuasive. The rejection of claims 1 and 2 with respect to Kepner et al. has been withdrawn.

***Conclusion***

Group II, claims 1, 2, 4 and 17, have been elected without traverse.

Claims 7-14, 21 and 22 have been withdrawn as being drawn to a nonelected invention.

Claims 1, 2, 4 and 17 have been rejected.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SERENA L. HANOR whose telephone number is (571)270-3593. The examiner can normally be reached on Monday - Thursday 8:00 AM - 5:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571) 272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SLH

/Timothy C Vanoy/

Primary Examiner, Art Unit 1793